

Extra Credit for Geometry

- CLIMBING IN YOSEMITE 12 points total
- David and Emily are climbing El Capitan, a big cliff wall in Yosemite National Park. David is on the ground holding the rope attached to a carabiner (a rope “pulley” that is on the wall) above Emily as she climbs. When Emily stops to rest, David wonders how high she has climbed. The rope is attached to his waist, about 3 feet off of the ground, and he has let out 48 feet of rope which goes up to the carabiner and then back down the wall to Emily’s harness. The rope at David’s waist makes a  $55^\circ$  angle with the ground and he is standing 20 feet away from the base of the wall.

A.) Draw and label a complete diagram of this situation.

B.) Assuming that the rope is taut (i.e., pulled tight), approximately how long is the rope between David and the carabiner above Emily? SHOW ALL WORK

C.) How high up the wall has Emily climbed?

D.) FULLY Describe your method.